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ABSTRACT

This research paper examines the relationship between individual differences in environmental perception, and variables which may be important in predicting, if not explaining those variations. The analyses reported were based upon an environmental perception research study previously conducted at the University of California at Berkeley during the years 1972-1974. The subjects of the study were 575 males and 573 females living in the San Francisco Bay area. This sample was drawn from three distinct subpopulations to ensure a range of socioeconomic strata, varying degrees of familiarity with the research site, and varying expertise in environmentally and non-environmentally related occupations. Subjects were presented with the environmental setting--a typical suburban locale in California--through four types of media: direct auto tour; auto tour color film; scale model color film; or scale model black and white videotape. The subjects then completed a battery of environmental assessment and evaluation procedures, and a battery of inventories assessing attitudinal, personality, and sociodemographic background characteristics. Analyses of this research indicated quite clearly that both personality and sociodemographic variables contribute meaningfully to the prediction of individual variations in environmental perception. Moreover, both sets of predictors contribute meaningfully to prediction even when the effects of the other respective set is statistically removed. Research is still needed across a wide range of environmental contexts and concerted efforts must be directed toward the development of valid measurement methods which may be administered in a brief time period, are easily scored, and readily integrated into the design process.
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Personality and Sociodemographic Variables as Sources of Variation in Environmental Perception[1, 2]

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The research which I would like to discuss with you today concerns the relationship between individual differences in environmental perception, and variables which may be important in predicting, if not explaining those variations.

It should be noted at the outset that the term perception is used here in a relative unrestrictive fashion, as it generally has been in environmental psychology and related disciplines (Feimer, in press; Ittelson, 1973; Proshansky, Ittelson, & Rivlin, 1976). In general, it can be taken to refer to the collective impressions individuals form of environmental settings, including both the connotative and denotative associations that derive from the cognitive-perceptual and social processes that are inextricably tied to their daily functioning in the environment.

The study of environmental perception has, of course, been a central focus of research concerning human behavior and the sociophysical environment (Craik, 1970, 1973, 1977, 1978; Feimer, in press; Proshansky, Ittelson, & Rivlin, 1976; Saarinen, 1976; Stokols, 1978). A vigorous body of research has led to significant advances in knowledge of such facets of environmental perception as spatial cognition (see Craik, 1973, 1977; Evans, 1980; Feimer,

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[1]Presented in the symposium: "Environmental Cognition" (Harold M. Proshansky, Chair) at the Annual Meetings of the American Psychological Association, Los Angeles, August 25, 1981.

[2]The study reported in this paper was part of the author's doctoral dissertation in psychology (Feimer, 1979), submittted to the Graduate Division of the University of California, Berkeley.

in press; Moore, 1979; Moore & Gooledge, 1976; Stokols, 1978) the perceptions of environmental hazards (see Burton, Kates & White, 1978; Craik, 1970; Feimer, in press; Kates, 1976; Saarinen, 1976), environmental aesthetics (see Wohlwill, 1976), and the perception of salient characteristics of institutional settings (see James & Jones, 1974; Moos, 1975a, 1975b, 1974; Payne & Pugh, 1976; Stern, 1970) such as psychiatric wards, educational settings, and business organizations. Appropriately, much of this research has addressed itself to communalities in environmental perception - that is, the specification of environmental features which are readily identified and attended to by individuals in the course of normal interaction within the environment (Feimer, in press). However, a growing body of research suggests that systematic individual differences in the construal of environmental conditions are discerniable and may be important in the determination of behavior (Craik, 1976; Ellsworth & Maroney, 1972; Golding, 1977; Guion, 1973; James & Jones, 1974; Moore, 1979; Payne & Pugh, 1976; Saarinen, 1976).

Although it seems clear that individuals vary in their perception of environmental characteristics, there is little agreement concerning the major sources of variation. Personality and socioeconomic or sociodemographic variables are often suggested as influential in determining variations in environmental perception (Craik, 1970, 1973, 1976; Little, 1972, 1976; Lowenthal, 1967; Lowenthal & Riel, 1972; Murray, 1938; Pervin, 1977; Stern, Stein & Bloom, 1956; Saarinen, 1969, 1976), but to date evidence concerning the effects of personality and sociodemographic variables is fragmentary and inconclusive. However, the implications of the possibility of such effects are significant, particularly in applied contexts such as environmental planning and design. Such a recognition requires, in essence,

the establishment of a significant data base concerning individual differences within potential user populations as a basis for optimizing environments, and clearly limits the general utility of individual designs as well. The question of the incremental validity of personality variables vis-a-vis sociodemographic variables is particularly important, since information concerning the former class of variables is generally attainable only at considerable effort and expense.

Within the context of the foregoing comments, the goals of the current study were threefold: (1) identify salient, or at least reasonable dimensions characterizing variations in environmental perception; (2) assess the magnitude of the relationship between those dimensions and both personality and sociodemographic variables; and (3) assess the incremental validity of the most optimal predictors from each set.

Method

The analyses to be reported were based upon an archival data source large enough to permit the derivation of stable statistical relationships (n = 1148). The data were those collected for the Environmental Simulation Project, under the aegis of the Institute of Personality Assessment and Research, at the University of California, at Berkeley, during the calendar years 1972-1974, with Professors Donald Appleyard and Kenneth Craik as principal investigators.[3] Because of the extremely broad scope of that research project and the complexity of the associated experimental design, a complete description of the methodology employed cannot be given within the current time constraints. I will present only those aspects of the

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[3]The research reported in this paper was supported by National Science Foundation grants GS-30984X and SOC73-05706-A02 to Donald Appleyard and Kenneth Craik (principal investigators), and by funds provided to the author by the University of California Computing Services Center.

methodology which are most pertinent to the current analyses, or which could conceivably have some impact on them. More comprehensive descriptions are given in Craik (1975a, 1975b) and Feimer (1979).

Environmental Stimulus/Research Site. The environmental context which constitutes the stimulus array in this study is a typical suburban locale in California. Topographically, it may be described as consisting of low rolling hills with extensive grassy areas and spotted with a small variety of deciduous trees. A standard nine-mile, twenty-five minute auto tour through the area was delineated, sampling the range of land uses, which included residential, commercial, industrial, and undeveloped segments.

Media of Presentation. Although not relevant to the aims of the current study, the research project which generated the data used in the analyses to be reported was concerned to a substantial degree with the validation of environmental simulation techniques. To that end, four media were employed to present the environment to subjects. They will be noted briefly here and in the discussion of results, since they could conceivably affect perceptual responses:

(1) Direct Auto Tour (AT): An actual auto tour of the delineated route;

(2) Auto Tour Color Film (AF): A 16 MM color film of the auto tour;

(3) Scale Model Color Film (MV): A 16 MM color film of the auto tour route through a one-inch to thirty feet scale model that simulated eye level automobile travel through the environment by use of a small lens probe and stop-frame cinematography (see Appleyard & Craik, 1974, 1978; Craik, 1975a; McKechnie, 1977);

(4) Scale Model Video Tape (MV): A black and white videotape made from the scale model film (MV).

Subjects. The complete sample consists of 575 male and 573 female adults (total n = 1148) living in the San Francisco Bay area. This sample was drawn from three distinct subpopulations, which were identified and systematically sampled to ensure a range of socioeconomic strata, varying degrees of familiarity with the research site, and varying expertise in environmentally and non-environmentally related occupations. The subsamples were constituted and drawn as follows:

(1) Countywide sample: This subsample consists of 351 male and 523 female residents of Marin County, California. Participation was solicited by letter of invitation with subsequent telephone follow-up. Names, addresses and phone numbers of prospective participants were obtained from the public telephone directory for Marin County, using a modified random sampling procedure.

(2) Site sample: This subsample consists of 21 male and 29 female (total n = 50) residents of streets within the visual boundaries of the research site. Names were randomly drawn from the public telephone directory using the streetaddresses falling within those boundaries. Letters of invitation were sent to all names drawn with subsequent follow-up telephone calls.

(3) Professional sample: This subsample consists of 203 male and 21 female (total n = 224) residents of the greater San Francisco Bay Area who, at the time of the research, dealt with the built physical environment as part of their occupational profession. Candidates' names were randomly

drawn from professional directories in the following occupations: architecture, city and regional planning, landscape architecture, transportation engineering and planning, real estate appraisal, and realty. Letters of invitation were sent to all names drawn with subsequent follow-up telephone calls.

The breakdown of the sample distribution by media of presentation, sex, and subsample is given in Table 1. All subjects in the countywide and professional samples were randomly assigned to media conditions. Due to the limited size of the site sample, all subjects in that subsample were assigned to the AT media condition.

Procedure. Subjects participated in a daylong series of procedures as depicted in Table 2. As you can see from this schedule, subjects were first presented with the environmental setting, then completed a battery of environmental assessment and evaluation procedures, and finally completed a battery of inventories assessing attitudinal, personality, and sociodemographic background characteristics.

Dependent Measures. Three comprehensive, multivariate environmental assessment inventories developed by Craik and his associates (Craik, 1971, 1975a) were used as a basis for the derivation of dependent variables. These instruments are:

(1) The Environmental Adjective Check List (EACL; Craik, 1975a), which consists of 300 adjectives that are commonly used to describe a broad range of environmental settings;

(2) The Landscape Adjective Check List (LACL; Craik, 1968, 1971, 1975a, 1975b), which consists of 240 adjectives commonly used to describe predominately natural landscape scenes; and

(3) The Regional Q-Sort Deck (RQSD; Craik, 1975a), which consists of 67 statements pertinent to the description of environmental regions.

All three inventories are structured instruments which were developed to describe large-scale physical environments through the perceptions of observers. Although formal scales have not yet been fully developed for these measures, scale scores were derived for the purposes of this study by unit weighting high loading items (.30 or greater) from previous factor analyses carried out by Craik (1975a). This procedure yields a total of 15 scales, five from the EACL, four from the LACL, and six from the RQSD. Although time does not permit a discussion of items constituting each scale, the labels of scales given in Table 3 provide a reasonable indication of their content.

Independent Measures. Thirty-four personality variables and eight sociodemographic variables constituted the predictors used in this study. The personality measures include:

(1) The twenty-four standard scales of the Adjustive Check List (ACL; Gough & Heilbrun, 1965) which provide measures of conventional interpersonal and intrapsychic personality constructs (listed in Table 4);

(2) The eight content scales of the Environmental Response Inventory (ERI; McKechnie, 1974) which provide measures of individual differences in thought, affect and behavior in response to the physical environment (listed in Table 5);

(3) The Barron-Welsh Art Scale (BWAS; Barron & Welsh, 1952), which is a single measure of aesthetic sensitivity; and

(4) The Gottshaldt Figures Test (GFT; Crutchfield et al., 1958) which is a single measure of cognitive-spatial ability.

The sociodemographic variables includedin the analysis are: age, education (according to one of eight categories), family income (according to one of eleven categories), marital status (married or unmarried), a self-rating of political orientation (liberalism-conservatism on a five-point scale), professional status as an environmental specialist (two category membership-nonmembership option), sex, and a self-rating of familiarity with the tour area (six-point scale). Marital status, professional status, and sex were treated as categorical variables, with the balance being treated as continuous ordinal variables.

Results

Environmental Perception Measures. The scale scores of the EACL, LACL and RQSD were intercorrelated to determine their degree of convergence in the assessment of environmental perception. A perusal of the correlation matrix, which is given in Table 6, indicates a relatively high degree of correspondence among the scales, both within and between the three instruments. Of the 105 correlations represented in Table 6, 89 or 85% are significantly correlated at the .01 probability level.

To eliminate this rather substantial redundancy in measurement, principal components analysis with varimax rotation was performed. Three factors were extracted, accounting for 69.4 percent of the total variance. The rotated factor matrix is presented in Table 7. Factor I (Evaluation) is largely evaluative. It is characterized by high positive loadings on substantively diverse variables where high scores indicate a generally favorable quality. The positive pole of the first factor indicates perception of the tour area as beautiful, scenic, neat, delightful, serene, lush and active. Factor II

(Austere-Attractive) is a polar dimension where the positive pole indicates environmental austerity and the opposite pole indicates attractiveness. The positive pole is characterized by perception of the tour area as monotonous, ordinary, dry, barren, low in scenic quality, poorly planned, lacking in community amenities, and containing poorly designed and maintained buildings. The other pole of Factor II is characterized by perception of the tour area as relatively high in general scenic quality, well planned and maintained, and possessing adequate community amenities. Factor III (Activity Level) can be characterized as an activity factor. It is represented by high loadings on RQSD:EA AND EACL:AB. Thus, the positive pole of Factor III reflects perception of the tour area as an active, busy place, and the opposite pole indicates a perception of relative quiesence.

Factor scores were computed for all subjects on each of the three environmental perception factors and constitute the dependent measures used in all subsequent analyses. All three of these variables were converted to a standard scale with a mean of 50 and standard deviation of 10.

Media Effects. Since the effects of media might conceivably account for individual variations in perceptions of the environment, an appraisal of those effects was carried out prior to the correlational analysis of the effects of personality and sociodemographic variables. The effects of media of presentation were evaluated by one-way analysis of variance, where media conditions constitute the independent variable, and the three environmental perception variables constitute the dependent variables. The means, F tests and ETA^2 coefficients from those analyses are given in Table 8. Media of presentation had a significant effect upon Evaluation ($p < .001$), and Activity

Level, but those differences accounted for only three percent and two percent of the variance, respectively. The differences among the means of media conditions for the Activity Level variable are so slight and inconsistent as to be psychologically uninterpretable. However, the differences among media conditions for Evaluation appear to indicate that favorable evaluation of the tour area declines slightly and consistently from the most realistic, direct media of presentation (AT) to the most indirect and impoverished (MV).

Correlation and Regression Analyses. The zero order correlations between the predictor (personality and sociodemographic variables) and criterion (environmental perception variables) are given in Table 9. Many personality and sociodemographic background (SDB) variables are significantly ($p < .01$) correlated with each of the environmental perception variables, but the overall magnitude of these correlations is relatively low. The average magnitude of correlation is a modest .09, and the five highest correlations (ACL: No Ckd with Evaluation; and, ERI:EA, GFT, AGE, and Political Orientation with Austere-Attractive) are in the moderate range of .30 to .37.

Multiple linear regression was employed to assess the cumulative validity of personality and sociodemographic variables. Three separate analyses were made for each of the environmental perception variables: One was carried out for each of the two predictor subsets (personality and SDB), and one was carried out for the two sets combined. In each case stepwise, multiple regression was performed, with termination at the first step at which the succeeding variable failed to add significantly ($p < .05$) to prediction (Cohen & Cohen, 1975; Nie et al., 1975). The validity coefficients (R^2) for the regression analyses are given in Table 10.

The best combination of personality variables for prediction of Evaluation ($R = .41$, $p < .001$) consists of ACL: No Ckd, ACL:Df, and ERI:EA with positive regression weights, and ERI:NP with a negative regression weight. The best combination of SDB variables for prediction of Evaluation consists of Familiarity, Marital Status, and Sex (the coded values for Sex are "1" for females and "2" for males), all with positive regression weights ($R = .15$, $p < .001$). A comparison of the proportion of variance explained by personality and SDB variables independently reveals that the use of SDB variables alone results in substantially lower prediction. Not surprisingly, the most optimal level of prediction of Evaluation is provided by a combination of both sets of predictors ($R = .44$, $p < .001$). The equation combining personality and SDB variables consists of ACL: No Ckd, ACL:Df, ERI:EA, GFT, Familiarity and Marital Status with positive regression weights, and ERI:NP with a negative regression weight. Based upon these personality and SDB variables, individuals who evaluate the tour area in a favorable manner tend to be married, familiar with tour area, responsive, resolute, gregarious, inclined toward a convenient environment adapted to human purposes, and adept at analytic decomposition of visual stimuli. Alternatively, those who evaluate the tour area unfavorably tend to be unmarried, unfamiliar with the tour area, reserved, apprehensive, solitary, inclined toward preservation of natural environments, and responsive to global rather than particular aspects of visual fields.

Substantial prediction of the Austere-Attractive environmental perception dimension is achieved by both personality and SDB variables and once again the combination of the two variable sets exceeded their use independently (see Table 10). The most predictive combination of personality variables consists of ACL:No Ckd, ACL:Int, ERI:UR, ERI:ET, BWAS, and GFT with positive regression

weights, and ACL:Fav, ACL:Nur, ERI:EA, ERI:TO and ERI:Mo with negative regression weights. The most optimal combination of SDB variables consists of Education and Political Orientation with positive regression weights, and Age and Familiarity with negative regression weights. The regression equation combining both personality and SDB variables consists of ACL:No Ckd, BWAS, ERI:UR, GFT, Education, and Political Orientation, with positive regression weights, and ACL:Aff, ACL:Het, ERI:EA, ERI:TO, Age, Familiarity and Sex with negative regression weights. Based upon this latter equation, those who perceive the tour area to be austere tend to be educated, liberal, young, male, unfamiliar with the tour area, independent, mature, responsive, antiquarian, aesthetically reactive, disposed toward urban life styles, inclined toward preservation of natural environments, and adept at analytic decomposition of visual stimuli. Those who perceive the tour area to be attractive tend to be relatively older, uneducated, female, reserved, familiar with the tour area, sociable and reactive to global rather than particular aspects of visual fields. In addition, the latter group of individuals are favorably inclined toward a convenient environment adapted to human purposes, modern surroundings and non-urban life styles, and exhibit a lesser degree of aesthetic sensitivity.

The pattern of predictive validity for the Activity Level, environmental perception variable follows that established by the other regression analyses: Personality variables slightly exceed SDB variables, and the combination of the two variable sets slightly exceeds the use of either set independently. The best combination of personality variables for the prediction of the Activity Level dimension consists of ACL:Suc, ACL:Cha, and ERI:EA with positive regression weights, and ERI:UR, ERI:NP and GFT with negative regression weights. The most

predictive combination of SDB variables consists of Familiarity with a positive regression weight, and Education and Political Orientation with negative regression weights. A combination of both personality and SDB variables provides the best prediction of the Activity Level dimension. That equation consists of ACL:Cha, ACL:Suc, and ERI:EA with positive regression weights, and ERI:UR, ERI:NP, GFT, Education and Political Orientation with negative regression weights. Based upon the variables included in the equation combining personality and SDB variables, those who perceive the tour area as active and busy tend to be relatively uneducated, conservative in political orientation, gregarious, dependent, seekers of variety and change, reactive to global rather than particular aspects of visual fields, and inclined toward non-urban life styles and a convenient environment adapted to human purposes. Those who perceive the tour area as inactive are relatively more educated, politically liberal, solitary, independent, stable, adept at analytic decomposition of visual stimuli, inclined toward urban life styles and preservation of natural environments.

Incremental Validity: Stepwise multiple linear regression was also employed to assess the incremental validity of personality and SDB variables for prediciton of each of the three environmental perception variables. For each of the environmental perception variables, two regression analyses were performed, one to determine the incremental validity of the personality variables over SDB variables, and one for the converse. On the first step of each regression analysis the most optimal predictive subset of the variable set being controlled, or incremented, is entered into the regression equation, and then the variables of the other set of variables are allowed to enter the equation

in stepwise fashion as long as they add significantly ($p < .05$) to prediction. The subset of variables statistically controlled in each analysis is given by the regression analyses just discussed.

A summary of the incremental validities of the two predictor sets across the environmental perception measures is presented in Table 11. Both personality and SDB variables contribute significantly ($p < .01$) to prediction of all environmental perception variables after controlling for the other respective subset of predictors. However, it is clear that in general, personality variables add more incremental predictive variance than do SDB variables. On average, personality variables increase prediction over the best subset of SDB variables by 11.7 percent. Conversely, only an average of 3.3 percent of the variance in environmental perception was explained by SDB background variables after controlling for the best predictive subset of personality variables. The differences in the incremental validities of the two predictor subsets is most pronounced with respect to Evaluation and Austere-Attractive, where personality variables hold a 14.0 and 9.6 percent edge in incremental prediction, respectively. The difference in the incremental validities of the two predictor subsets is relatively small with respect to the Activity Level dimension (1.7%) and neither set increases prediction over the other set alone by a large margin.

Concluding Remarks

The results of these analyses indicate quite clearly that both personality and sociodemographic variables contribute meaningfully to the prediction of individual variations in environmental perception. Moreover, both sets of predictors contribute meaningfully to prediction even when the effects of the

other respective set is statistically removed. This is particularly true for personality variables. However, a great deal of research is still needed on at least two accounts. First, although this study was based upon a large and diverse sample of subjects, it was based upon a single (and hopefully representative) environmental setting. Thus, research is needed across a wide range of environmental contexts to assess the generality of the findings reported here. Second, for the sake of our colleagues in the design professions, concerted efforts must be directed toward the development of reliable, valid measurement methods which may be administered in a brief time period, are easily scored, and readily integrated into the design process. Most measures currently available are lacking in at least two of those three features.

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Table 1

Sample Distribution

	Site			Countywide			Professional			Totals		
	M	F	T	M	F	T	M	F	T	M	F	T
Auto Tour	21	29	50	72	115	187	53	9	62	146	153	299
Film of Auto Tour	-	-	-	132	165	297	57	4	61	189	169	358
Film of Model	-	-	-	70	122	192	48	3	51	118	125	243
Videotape of Model	-	-	-	77	121	198	45	5	50	122	126	248
Totals	21	29	50	351	523	874	203	21	224	575	573	1148

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Table 2

Schedule of Procedures

8:45	Continental Breakfast Welcome
9:00	Environmental Tour (direct-film-video; site-model)
9:40	Mood Checklist
9:55	Free Description of Tour List of Noteworthy Features List of Regions Map-sketch Route Configuration (string) Regional Q-Sort Deck Information Quizzes A and B
11:30	Coffee Break
	Recognition Test Environmental Inference and Description Environmental Evaluation Environmental Adjective Check List Landscape Adjective Check List Media Description Form
12:30	Lunch and Discussion (participants and staff) Film and Description of NSF Environmental Simulation Project
1:30	Personal and Environmental Background Form (including Living Room Check List) Familiarity with Tour Area Marin County Consequences Environmental Attitudes Survey Gottschaldt Figures Test Social Attitudes Test Barron-Welsh Art Scale Leisure Activities Blank Environmental Response Inventory Adjective Check List Visual Acuity Test (individually administered)
3:30-4:30	Farewell

[a] From Craik (1975a).

Table 3

Dimensions from Craik's (1975a) Factor Analyses of the EACL, LACL, and RQSD

EACL	LACL	RQSD
(1) satisfying - delightful	(1) serene - gentle	(1) scenic quality
(2) monotonony - ordinary	(2) dry - barren	(2) incremental - planned development
(3) beautiful - scenic	(3) beautiful - picturesque	(3) quality of environmental design and management
(4) neat - maintained	(4) blooming - cultivated	(4) community amenities
(5) active - busy		(5) environmental activity level
		(6) density of development

Table 4

Adjective Check List (ACL) Scales

1. Number of adjectives checked (No Ckd)
2. Defensiveness (Df)
3. Number of favorable adjectives checked (Fav)
4. Number of unfavorable adjectives checked (Unfav)
5. Self-confidence (S-Cfd)
6. Self-control (S-Cn)
7. Lability (Lab)
8. Personal Adjustment (Per Adj)
9. Achievement (Ach)
10. Dominance (Dom)
11. Endurance (End)
12. Order (Ord)
13. Intraception (Int)
14. Nurturance (Nur)
15. Affiliation (Aff)
16. Heterosexuality (Het)
17. Exhibition (Exh)
18. Autonomy (Aut)
19. Aggression (Agg)
20. Change (Cha)
21. Succorance (Suc)
22. Abasement (Aba)
23. Deference (Def)
24. Counseling Readiness (Crs)

Table 5

Environmental Response Inventory (ERI) Scales

1. Pastoralism (PA)
2. Urbanism (UR)
3. Environmental Adaptation (EA)
4. Stimulus Seeking (SS)
5. Environmental Trust (ET)
6. Time Orientation (TO)*
7. Need Privacy (NP)
8. Mechanical Orientation (MO)
9. Communality (CO)

*The TO scale has been reflected and renamed Antiquarianism in the most recent version of this inventory.

Table 6

Intercorrelations Among Environmental Perception Scales

	EACL:DB	EACL:DP	EACL:DC	EACL:SD	EACL:ND	EACL:DS	EACL:DH	EACL:AB	BQSD:SQ	BQSD:IP	BQSD:QD	BQSD:CA	BQSD:EA	BQSD:ND
EACL:SG	.29	.72	.62	.68	-.02	.59	.54	.35	.24	.08	-.15	.14	-.07	-.14
EACL:DB	-	.26	.21	.11	.52	.21	.20	.35	-.11	-.23	.19	-.12	-.01	.20
EACL:DP		-	.64	.60	-.12	.67	.42	.39	.27	.18	-.19	.08	.01	-.12
EACL:DC			-	.53	-.11	.59	.47	.43	.25	.09	-.23	.12	.10	-.10
EACL:SD				-	-.24	.79	.62	.41	.33	.20	-.28	.22	-.05	-.24
EACL:ND					-	-.20	.01	.12	-.43	-.29	.46	-.18	-.10	.27
EACL:DS						-	.56	.47	.36	.18	-.28	.15	-.04	-.16
EACL:DH							-	.35	.25	-.03	-.22	.18	-.11	-.18
EACL:AB								-	.01	.01	-.06	.05	.14	.02
BQSD:SQ									-	.04	-.46	.29	-.14	-.26
BQSD:IP										-	-.10	.21	.03	-.25
BQSD:QD											-	-.22	-.04	.22
BQSD:CA												-	-.06	-.19
BQSD:EA													-	.13

[a]Correlations of .08 or greater are significant at .01 probability level.

Table 7

Varimax Rotated Factor Matrix of Environmental Perception Scales

	Factor 1	Factor 2	Factor 3
LACL:SG	.83	-.03	-.10
LACL:DB	.45	.66	-.01
LACL:BP	.81	-.11	.06
LACL:BC	.76	-.12	.17
EACL:SD	.81	-.29	-.06
EACL:MO	.02	.84	-.13
EACL:BS	.83	-.22	.01
EACL:NM	.72	-.06	-.22
EACL:AB	.61	.15	.50
RQSD:SQ	.30	-.57	-.27
RQSD:IP	.06	-.48	.18
RQSD:QD	-.22	.63	-.03
RQSD:CA	.16	-.43	-.16
RQSD:EA	-.02	-.04	.90
RQSD:DD	-.13	.49	.27

[a]Highest factor loading for each variable is underlined.

Table 8

Means, F Tests, and ETA^2 Coefficients for Environmental Perception Measures by Media of Presentation

Measure	Media of Presentation Means					
	AT (n = 299)	AF (n = 358)	MF (n = 243)	MV (n = 248)	F^a	ETA^2
Evaluation	52.56	50.25	48.67	47.86	12.20***	.03
Austere-Attractive	49.57	49.97	50.92	49.67	.96	.00
Activity Level	50.79	50.44	50.93	47.50	6.81***	.02

[a]df = 3,1144

***p < .001.

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Table 9

Zero-order Correlations of Environmental Perception Variables with Personality and Socio-Demographic-Background Variables

	Evaluation	Austere-Attractive	Activity Level
ACL:			
No. Ckd	.37	.27	.03
Df	.16	-.10	-.02
Fav	.20	-.05	-.03
Unfav	.03	-.23	-.02
S-Cfd	.09	-.02	-.01
S-Cn	.08	-.16	-.04
Lab	.07	.14	-.04
Per Adj	.13	-.16	-.02
Ach	.11	.01	-.03
Dom	.05	-.03	-.01
End	.05	-.10	-.04
Ord	.07	-.06	-.05
Int	.13	.02	-.07
Nur	.06	-.20	-.04
Aff	.17	-.14	.01
Het	.08	-.07	.06
Exh	-.01	-.03	.03
Aut	.04	.20	-.03
Agg	-.06	.14	.00
Cha	.06	.15	.03
Suc	-.03	.07	.08
Aba	-.00	.03	.01
Def	.01	-.14	.03
Crs	-.01	.16	-.06
ERI:			
PA	.01	.21	.00
UR	.04	.11	-.19
EA	.14	-.35	.11
SS	.05	.18	-.02
ET	.00	.13	-.11
TO	-.01	.21	.03
MP	-.08	.08	-.08
MO	.02	-.03	.04
SWAS	-.01	.27	-.04
GFT	.04	.30	-.14
Socio Demo:			
Age	-.03	-.33	.00
Education	-.01	.27	-.25
Familiarity	.15	-.14	.11
Income	.02	.02	-.01
Marital	.06	-.06	.01
Polit. Orient	-.02	.31	-.16
Prof. Status	-.06	.17	-.13
Sex	.07	-.05	.10

[a]Correlations of .08 or greater are significant at the .01 probability level.

Table 10

Validity Coefficients for Regression Analysis

	Predictor Sets[a]					
	Personality		Socio-Demographic		Personality and Socio-Demographic	
Criterion Measures	R	R^2	R	R^2	R	R^2
Evaluation	.41	.17	.16	.03	.44	.19
Austere-Attractive	.58	.34	.47	.23	.62	.38
Activity Level	.31	.09	.28	.08	.36	.13

[a]All regressions are significant at $p < .001$.

Table 11

Incremental Validity for Personality and Socio-Demographic-Background Variables in Prediction of Environmental Perception

Measure	Personality		Socio-Demographic-Background	
	R^2 Increment	F	R^2 Increment	F
Evaluation	.165	46.45** (5,1132)[a]	.025	8.76** (2,1141)
Austere-Attractive	.137	43.80** (9,1138)	.041	6.80** (4,1132)
Activity Level	.050	32.68** (7,1137)	.033	7.17** (2,1139)
$\bar{X}$	.117	--	.033	--

[a]Degrees of freedom for F test are in parentheses.

**p < .01.